

# PATENT ABSTRACTS OF JAPAN

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## **(54) COMPOSITE COSMETIC TREATMENT DEVICE**

### **Claims**

[Claim 1]A probe which contacts a skin side and performs an ultrasonic treatment, and an ultrasonic wave oscillator which drives this probe, A compound cosmetics treatment device having an electrode which carries out electric conduction contact and performs a pulse treatment to each part of a human body, and pulse power which supplies pulse current to this electrode, and performing partial lean figure of an ultrasonic treatment, and whole body lean figure of a pulse treatment with one device.

[Claim 2]A probe which contacts a skin side and performs an ultrasonic treatment, and an ultrasonic wave oscillator which drives this probe, An electrode which carries out electric conduction contact and performs a pulse treatment to each part of a human body, and pulse power which supplies pulse current to this electrode, A human-body-impedance measuring means which equips a device table side and measures human body impedance via four terminal electrodes which carry out electric conduction contact, and these four terminal electrodes in a hand on either side, A personal-data input means which inputs personal data of sex, age, height, and weight, Said human body impedance and a body fat percentage calculating means which computes a body fat percentage based on personal data, A compound cosmetics treatment device performing body fat measurement for grasping partial lean figure of a preparation \*\*\*\*\* treatment, whole body lean figure of a pulse treatment, and the lean figure effect with one device.

### **Detailed Description of the Invention**

[0001]

[Field of the Invention] The pulse cosmetics machine which this invention sends pulse current

through a human body at the electrode which carries out electric conduction contact, stimulates a living body electrically, and performs a cosmetics treatment, Human body impedance is measured via the ultrasonic cosmetics probe which contacts the vibration body of an ultrasonic wave to skin surfaces, such as a face, and performs skin care, and four terminal electrodes, and it is related with the compound cosmetics treatment device which equipped one with the body fat measuring instrument which estimates body fat from a low price as current.

[0002]

**[Problem(s) to be Solved by the Invention]** In order to maintain the living body on a human body, it rests, bioelectric current flows that there is nothing, and cell activity and muscular contraction movement are performed. By supplying pulse current artificially from the exterior and stimulating a living body, a pulse cosmetics machine activates cell activity like bioelectric current, evokes muscular contraction movement, and improves a vital function.

[0003]There is a cause of overweight in barring circulation and mainly storing fat inside of the body by cholesterol in blood, or the increase in wastes. A pulse cosmetics machine is actively metabolized by promoting the flow of lymph or blood, and since excessive body fat is removed, there is an effect of whole body lean figure.

[0004]On the other hand, if it hits the skin in an ultrasonic wave, a supersonic vibration wave will be spread broadly, will give vibration to a skin side, will stimulate the circulation of a skin surface, and will activate an organization. Vibration by an ultrasonic wave massages a cell level, and the blubber which brandishes the wastes etc. with which the metabolic turnover was overdue, and has a shell structure depending on the output and frequency of a broth and an ultrasonic wave is rubbed and unfolded, it distributes, and fat is discharged to foreign through blood. Thus, an ultrasonic wave is actively metabolized by urging the circulation of the portion which acted, and there is an effect of the partial lean figure which removes wastes and disassembles neutral fat.

[0005]It is more effective, if the efforts which set up a target and are brought close to the target are performed when performing diet and calorie control for the purpose of lean figure. For that purpose, the ruler by which a target and its result can be evaluated concretely is needed. As this ruler, a body fat percentage is more preferred than weight. For the purpose, the environment where human body impedance is measured easily [ always ] and a body fat percentage can be grasped is required.

[0006]then, the 1st purpose of this invention can be made to do a synthetic lean figure treatment with one device combining a pulse cosmetics machine with the effect of whole body lean figure, and an ultrasonic cosmetics probe with the effect of partial lean figure. The 2nd purpose of this invention adds the value of goods by setting to one the body fat measuring instrument which displays the target and result of lean figure concretely, and having a function required for lean figure in stock.

[0007]

**[Means for Solving the Problem]** In order to attain this purpose, this invention was constituted as follows.

[0008]Namely, a probe which an invention of Claim 1 contacts a skin side and performs an ultrasonic treatment, An ultrasonic wave oscillator which drives this probe, and an electrode

which carries out electric conduction contact and performs a pulse treatment to each part of a human body, It is a compound cosmetics treatment device equipping this electrode with pulse power which supplies pulse current, and performing partial lean figure of an ultrasonic treatment, and whole body lean figure of a pulse treatment with one device. A probe which an invention of Claim 2 contacts a skin side and performs an ultrasonic treatment, An ultrasonic wave oscillator which drives this probe, and an electrode which carries out electric conduction contact and performs a pulse treatment to each part of a human body, Pulse power which supplies pulse current to this electrode, and four terminal electrodes which equip a device table side and carry out electric conduction contact at a hand on either side, A human-body-impedance measuring means which measures human body impedance via these four terminal electrodes, A personal-data input means which inputs personal data of sex, age, height, and weight, Said human body impedance and a body fat percentage calculating means which computes a body fat percentage based on personal data, It is a compound cosmetics treatment device performing body fat measurement for grasping partial lean figure of a preparation \*\*\*\*\* treatment, whole body lean figure of a pulse treatment, and the lean figure effect with one device.

[0009]

**[Embodyment of the Invention]** With reference to Drawings, an embodiment of the invention is described below.

[0010]The lineblock diagram of the compound cosmetics treatment device which carried out this invention is shown in drawing 1. A compound cosmetics treatment device connects the belt electrode 3, the tights electrode 4, and the ultrasonic cosmetics probe 5 to the control box 1 via the connector C and the cable 2, and connects AC adapter 7 via the external power terminal 6. The external power terminal 6 may contain and omit a battery to the control box 1.

[0011]The control box 1 contains the pulse power 11, the human-body-impedance measuring circuit 12, and the ultrasonic wave oscillator 13 which are mentioned later, and arranges color liquid crystal panel P at the front. And the electric supply lateral electrode H1, H1 and the detection lateral electrode H2, and H2 are provided in the both the right and left ends of an insulating case, and four terminal electrodes are constituted. The electric supply lateral electrode H1, H1 and the detection lateral electrode H2, and H2 cover the surface with hard chrome plating etc., and they establish and arrange an interval so that it may not contact mutually.

[0012]Color liquid crystal panel P performs measurement of body fat, operation of a pulse cosmetics treatment, operation of an ultrasonic cosmetics treatment, etc. Measurement of body fat operates a key, and inputs sex, age, height, and weight, and it specifies the start of measurement. A measurement result is displayed in forms, such as a numerical value or a graph, together with the past data.

[0013]Operation of a pulse cosmetics treatment performs specification of the kind of treatment or start of a treatment, a stop, setting out of a timer, etc., and adjusts the strength of pulse current.

[0014]Toning which has an effect which stimulates the depths of the body by a pulse with a low frequency of 5-10 Hz, makes skeletal muscle exercise, stimulates circulation of blood, and

massages and unfolds the body in the kind of treatment, The front part of the body is stimulated by a pulse with a high frequency of 20-100 Hz, the upper levels' muscles are made to exercise, the flow of lymph is promoted, and there is DORENAJU with the effect which removes an edema etc.

[0015]Special DORENAJU which goes up and down pulse voltage cyclically and to which a stimulus is changed, and special toning are one of DORENAJU and toning. Besides usual DORENAJU which passes a pulse to inter-electrode [ two or more ] simultaneously, and toning, Time series DORENAJU which divides time by a time series and passes a pulse to inter-electrode [ two or more ], time series toning, or time sharing DORENAJU which passes a pulse to inter-electrode [ two or more ] simultaneously by time sharing and time sharing toning occur.

[0016]Operation of an ultrasonic cosmetics treatment performs setting out of a timer performed by specifying a start, a stop and a face, and body of a treatment, or the change of output power and an output frequency.

[0017]The belt electrode 3 equips with the surface state electrode 32 inside [ which attached the face fastener ] the belt 31. The electric conduction hook 33 which flows in the surface state electrode 32 is attached to the outside of the belt 31, and the surface state electrode 32 is connected to it via this electric conduction hook 33 at the cable 2, enabling free attachment and detachment.

[0018]The tights electrode 4 equips the position corresponding to the hypogastrium of the tights 41 inside, a \*\*\*\*\* part, the lumbar part, a femoral region, a back-of-the-knee part, and a sural-region part with the surface state electrode 42. Sewing of the tights 41 is carried out with elastic large textile materials, they fit the body exactly, and press the surface state electrode 42 to the predetermined part of a lower half of the body. The electric conduction hook 43 which flows in the surface state electrode 42 is attached to the outside of the tights 41, and the surface state electrode 42 is connected to it via this electric conduction hook 43 at the cable 2, enabling free attachment and detachment.

[0019]The surface state electrodes 32 and 42 coat and form conductive carbon ink in the surface of flexible urethane resin. Or it may form in the surface of a flexible insulating belt sheet with what pasted up the aluminum stay, conductive rubber, or silicon (what mixed metal powder in rubber or silicon).

[0020]The ultrasonic cosmetics probe 5 attaches the vibration body 52 which has a flat apical surface at the tip of the tubed insulating case 51, and adheres the ultrasonic vibrator 53 constituted from electrostrictive ceramics linked to the ultrasonic wave oscillator 13 later mentioned inside the apical surface of this vibration body 52.

[0021]The vibration body 52 is pliant, is formed with metal, such as an elastic thin stainless steel plate or hard aluminum, duralumin, and a thin copper plate, and performs surface treatments, such as hard chrome plating.

[0022]First, an ultrasonic cosmetics treatment applies cream to the apical surface of a treatment part and the vibration body 52, and pressing the apical surface of the vibration body 52 lightly right-angled, and sticking it to a skin side, it moves the ultrasonic cosmetics probe 5 along a skin side so that a circle may be drawn slowly.

[0023]The block diagram of the control box 1 of the compound cosmetics treatment device

which carried out this invention is shown in drawing 2. The control box 1 consists of the control circuit 10, the pulse power 11, the human-body-impedance measuring circuit 12, and the ultrasonic wave oscillator 13.

[0024]The control circuit 10 builds in a timer and controls measurement of body fat, execution of a pulse cosmetics treatment, and execution of an ultrasonic cosmetics treatment according to operation of color liquid crystal panel P.

[0025]The pulse power 11 generates pulse current with a low frequency of 5-10 Hz, and a high frequency of 20-100 Hz.

[0026]The human-body-impedance measuring circuit 12 detects the detection lateral electrode H2 which supplies the sinusoidal wave alternative current voltage of 50 kHz to the electric supply lateral electrode H and H1, and carries out electric conduction contact at a hand on either side, and the volts alternating current generated in H2, and measures human body impedance.

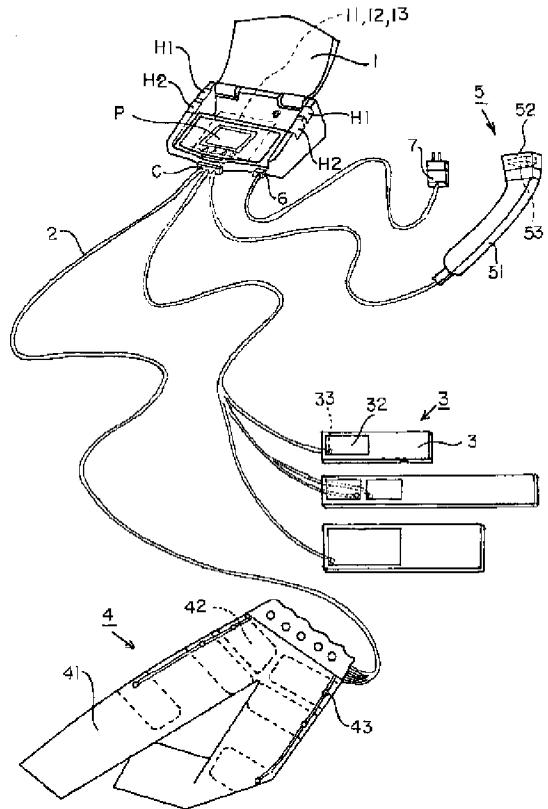
[0027]The ultrasonic wave oscillator 13 connects the ultrasonic vibrator 53 to the series parallel resonant circuit of LCR, and generates a 20-60-kHz ultrasonic wave.

[0028]

**[Effect of the Invention]** As explained above, the compound cosmetics treatment device of this invention is provided with the probe which performs an ultrasonic treatment, and the pulse cosmetics machine which performs a pulse treatment. Therefore, since both the whole body lean figure which sends pulse current through the whole body with one device, and removes excessive body fat, and the partial lean figure which applies an ultrasonic cosmetics probe to the portion which the body worries, and disassembles neutral fat into it can be used together according to this invention, These effects can be made to be able to multiply and a more efficient treatment can be performed. The compound cosmetics treatment device of this invention equips the body fat measuring instrument which measures human body impedance further and estimates a body fat percentage. Therefore, since the interest of a treatment can be made to maintain for a long time, a measure becomes highly motivated further, since the result of lean figure is a foregone conclusion with a body fat percentage according to this invention, and concentration increases, success sufficient for a short period of time can be achieved.

## DRAWINGS

Drawing 1



Drawing 2

